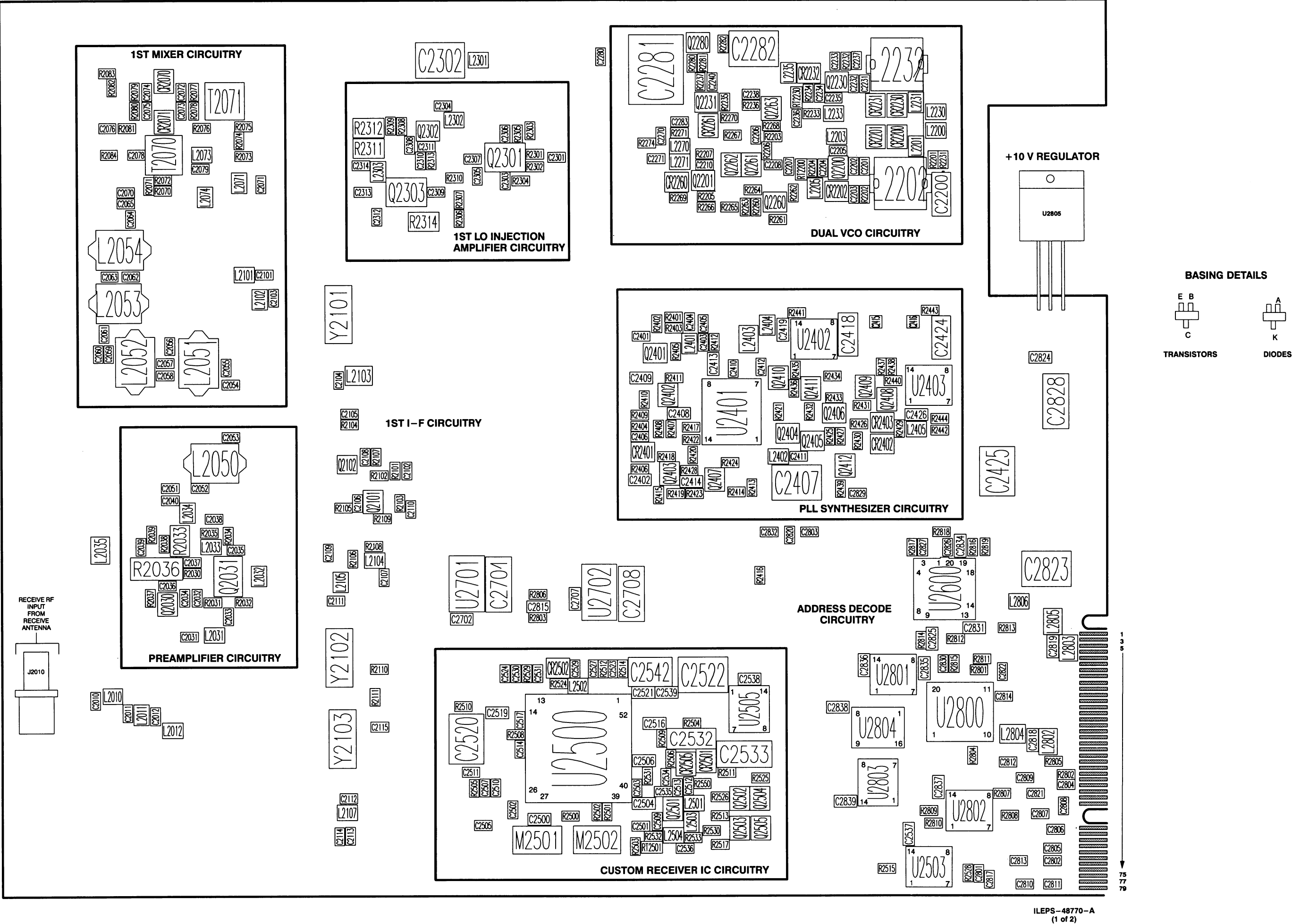


VHF RECEIVER MODULES
MODELS TRD6361D (R1)
TRD6362D (R2)



NOTE:
THE CIRCUIT BOARD EDGE CONNECTOR HAS PRINTED CIRCUIT PLATED CONTACTS ON BOTH SIDES OF THE BOARD EDGE. THE COMPONENT SIDE CONTACTS ARE NUMBERED 1, 3, 5, ETC.
THE SOLDER SIDE CONTACTS ARE NUMBERED 2, 4, 6, ETC.

SEE THE FOLLOWING TABLE FOR EDGE CONNECTOR PIN NUMBERING/SIGNAL NAME CROSS-REFERENCE.

PIN	SIGNAL NAME	PIN	SIGNAL NAME
1	GND	2	GND
3	GND	4	GND
5	EXT_SPARE1	6	EXT_SPARE2
7	EXT_SPARE3	8	EXT_SPARE4
9	EXT_SPARE5	10	EXT_SPARE6
11	EXT_SPARE7	12	EXT_SPARE8
13	EXT_SPARE9	14	EXT_SPARE10
15	EXT_SPARE11	16	EXT_SPARE12
17	RX_WB_AUDIO	18	GND
19	GND	20	GND
21	GND	22	+14.2 V INPUT
23	+14.2 V INPUT	24	+14.2 V INPUT
25	+14.2 V INPUT	26	+14.2 V INPUT
27	+5 V INPUT	28	+5 V INPUT
29	+5 V INPUT	30	+5 V INPUT
31	+5 V INPUT	32	+5 V INPUT
33	+5 V INPUT	34	+5 V INPUT
35	GND	36	GND
37	SPI_MISO	38	SPI_MOSI
39	SPI_CLK	40	RESET
41	HDLC_DATA	42	HDLC_BUSY
43	HDLC_CLK	44	TDM_SYNC
45	TDM_DATA	46	TDM_CLOCK
47	SPARE 1	48	SPARE 2
49	SPARE 3	50	SPARE 4
51	SPARE 5	52	SPARE 6
53	A0_CS1	54	A0_CS2
55	P5	56	A5
57	P4	58	A4
59	P3	60	A3
61	P2	62	A2
63	GND	64	GND
65	RX_2.1_REF	66	N/C
67	GND	68	GND
69	N/C	70	N/C
71	GND	72	GND
73	GND	74	AGC_IN
75	ODC	76	SBI
77	DATA	78	DATA*
79	GND	80	GND

VHF RECEIVER MODULES

MODELS TRD6361D (R1)

TRD6362D (R2)

parts list

TRD6361D / TRD6362D VHF Receiver Modules

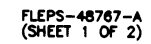
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REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		capacitor, fixed:
C2010	2113740A35	18 pF, ±5%; 50 V
C2011	2113740A46	47 pF, ±5%; 50V
C2012	2113740A51	68 pF, ±5%; 50V
C2031	2113740A51	68 pF, ±5%; 50V
C2032,2033	2113740A71	470 pF, ±5%; 50V
C2034 thru 2037	2113741A45	0.01 uF, ±5%; 50V
C2038	2113740A71	470 pF, ±5%; 50V
C2039	2113741A45	0.01 uF, ±5%; 50V
C2040	2113740A29	10pF, ±5%; 50V (TRD6361C only)
C2051	2113740A37	22 pF, ±5%; 50V (TRD6362C)
	2113740A33	15 pF, ±5%; 50V (TRD6361C)
C2052	2113740A39	27 pF, ±5%; 50V (TRD6362C)
	2113740A51	68 pF, ±5%; 50V (TRD6361C)
C2053	2113740A31	12 pF, ±5%; 50V (TRD6362C)
	2113740A39	27 pF, ±5%; 50V (TRD6361C)
C2054	2113740A46	47 pF, ±5%; 50V (TRD6362C)
	2113740A41	33 pF, ±5%; 50V (TRD6361C)
C2055	2113740A37	22 pF, ±5%; 50V (TRD6362C)
	2113740A43	39 pF, ±5%; 50V (TRD6361C)
C2056	2113740A41	33 pF, ±5%; 50V
C2057	2113740A43	39 pF, ±5%; 50V (TRD6362C)
	2113740A46	47 pF, ±5%; 50V (TRD6361C)
C2058	2113740A37	22 pF, ±5%; 50V (TRD6362C)
	2113740A41	33 pF, ±5%; 50V (TRD6361C)
C2059	2113740A43	39 pF, ±5%; 50V (TRD6362C)
	2113740A46	47 pF, ±5%; 50V (TRD6361C)
C2060	2113740A41	33 pF, ±5%; 50V
C2061	2113740A37	22 pF, ±5%; 50V (TRD6362C)
	2113740A43	39 pF, ±5%; 50V (TRD6361C)
C2062	2113740A43	39 pF, ±5%; 50V (TRD6362C)
	2113740A39	27 pF, ±5%; 50V (TRD6361C)
C2063	2113740A39	27 pF, ±5%; 50V
C2064	2113740A40	30 pF, ±5%; 50 V (TRD6362C)
	2113740A51	68 pF, ±5%; 50V (TRD6361C)
C2065	2113740A33	15 pF, ±5%; 50V
C2070	2113740A29	10 pF, ±5%; 50V (TRD6362C only)
C2071	2113740A33	15 pF, ±5%; 50V
C2072 thru 2075	2113741A45	0.01 uF, ±5%; 50V
C2076	2113740A71	470 pF, ±5%; 50V
C2078	2113740A24	6.8 pF, ±0.25 pF; 50V
C2079	2113740A57	120 pF, ±5%; 50V
C2101	2113740A37	22 pF, ±5%; 50V
C2102	2113741A29	2200 pF, ±5%; 50V
C2103	2113740A29	10 pF, ±5%; 50V
C2104	2113740A41	33 pF, ±5%; 50V
C2105	2113740A19	4.7 pF, ±0.25 pF; 50V
C2106 thru 2108	2113741A45	0.01 uF, ±5%; 50V
C2109	2113740G15	3.3 pF, ±0.1 pF; 50V
C2110	2113741A45	0.01 uF, ±5%; 50V
C2111	2113740A24	6.8 pF, ±0.25 pF; 50V
C2112	2113740G15	3.3 pF, ±0.1 pF; 50V
C2113	2113740A27	8.2 pF, ±0.25 pF; 50V
C2114	2113740G15	3.3 pF, ±0.1 pF; 50V
C2115	2113740G03	1 pF, ±0.1 pF; 50V
C2200	0811051A09	0.022 uF, ±5%; 63 V
C2201	2113740A33	15 pF, ±5%; 50V (TRD6362C)
	2113740A31	12 pF, ±5%; 50V (TRD6361C)
C2202	2113740A33	15 pF, ±5%; 50V (TRD6362C)
	2113740A29	10pF, ±5%; 50V (TRD6361C)
C2203,2204	2113740A71	470 pF, ±5%; 50V
C2205	2113740A35	18 pF, ±5%; 50 V
C2206	2113740A71	470 pF, ±5%; 50V
C2207	2113740A35	18 pF, ±5%; 50 V (TRD6362C)
	2113740A33	15 pF, ±5%; 50V (TRD6361C)
C2208	2113740G11	2.2 pF, ±0.1 pF; 50V
C2210	2113741A45	0.01 uF, ±5%; 50V

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C2231	2113740A31	12 pF, ±5%; 50V (TRD6362C)
	2113740A33	15 pF, ±5%; 50V (TRD6361C)
C2232	2113740A29	10 pF, ±5%; 50V (TRD6362C)
	2113740A33	15 pF, ±5%; 50V (TRD6361C)
C2233,2234	2113740A71	470 pF, ±5%; 50V
C2235	2113740A35	18 pF, ±5%; 50 V (TRD6362C)
	2113740A37	22 pF, ±5%; 50V (TRD6361C)
C2236	2113740A71	470 pF, ±5%; 50V
C2237	2113740A35	18 pF, ±5%; 50V
C2238	2113740G11	2.2 pF, ±0.1 pF; 50V
C2240	2113741A45	0.01 uF, ±5%; 50V
C2270	2113740G11	2.2 pF, ±0.1 pF; 50V
C2271	2113740A71	470 pF, ±5%; 50V
C2280	2113741A45	0.01 uF, ±5%; 50V
C2281	2380090M27	330 uF, ±20%; 16V
C2282	2380090M24	10 uF, ±20%; 50V
C2283	2113741A45	0.01 uF, ±5%; 50V
C2301	2113740A71	470 pF, ±5%; 50V
C2302	2380090M24	10 uF, ±20%; 50V
C2303 thru 2307	2113740A71	470 pF, ±5%; 50V
C2308	2113741A45	0.01 uF, ±5%; 50V
C2309,2310	2113740A71	470 pF, ±5%; 50V
C2311	2113741A45	0.01 uF, ±5%; 50V
C2312 thru 2314	2113740A71	470 pF, ±5%; 50V
C2401	2113740A39	27 pF, ±5%; 50V
C2402	2113741B69	0.1 uF, ±5%; 50 V
C2403,2404	2113740A71	470 pF, ±5%; 50V
C2405	2113740A43	39 pF, ±5%; 50V
C2406	2113741A45	0.01 uF, ±5%; 50V
C2407	2380090M24	10 uF, ±20%; 50V
C2408,2409	2113741B69	0.1 uF, ±5%; 50V
C2410 thru 2412	2113740A71	470 pF, ±5%; 50V
C2413,2414	2113741B69	0.1 uF, ±5%; 50V
C2415,2416	0811051A19	1 uF, ±5%/-0.5%; 63V
C2418	0811051A15	0.22 uF, ±5%; 63 V
C2419	2113741B69	0.1 uF, ±5%; 50 V
C2424	0811051A09	0.022 uF, ±5%; 63 V
C2425	2380090M24	10 uF, ±20%; 50V
C2426	2113741B69	0.1 uF, ±5%; 50V
C2500	2113741B69	0.1 uF, ±5%; 50 V
C2501	2113740A21	5.6 pF, ±0.25 pF; 50V
C2502,2503	2113741A45	0.01 uF, ±5%; 50V
C2504	2113741B69	0.1 uF, ±5%; 50 V
C2505	2113741A45	0.01 uF, ±5%; 50V
C2506	2113741B69	0.1 uF, ±5%; 50 V
C2507	2113741A45	0.01 uF, ±5%; 50V
C2509	2113740A51	68 pF, ±5%; 50V
C2510,2511	2113741A45	0.01 uF, ±5%; 50V
C2512	2113740A49	56 pF, ±5%; 50V
C2513	2113740A37	22 pF, ±5%; 50V
C2514	2113741A61	0.047 uF, ±5%; 50V
C2516	2113741B69	0.1 uF, ±5%; 50 V
C2517	2113741A57	0.033 uF, ±5%; 50V
C2519	2113741B69	0.1 uF, ±5%; 50 V
C2520	2380090M24	10 uF, ±20%; 50V
C2521	2113741B69	0.1 uF, ±5%; 50 V
C2522	2380090M24	10 uF, ±20%; 50V
C2523,2524	2113741A45	0.01 uF, ±5%; 50V
C2527	2113741A45	0.01 uF, ±5%; 50V
C2529	2113740A71	470 pF, ±5%; 50V
C2530	2113741A53	0.022 uF, ±5%; 50V
C2531	2113740A55	100 pF, ±5%; 50V
C2532	2311049A10	2.2 uF, ±10%; 35V
C2533	2485588U04	22 uF, ±10%; 20 V
C2534	2113740G11	2.2 pF, ±0.1 pF; 50V
C2535	2113740A51	68 pF, ±5%; 50V
C2536	2113740A79	1000 pF, ±5%; 50V
C2537 thru 2539	2113741B69	0.1 uF, ±5%; 50 V
C2542	2380090M22	4.007 uF, ±20%; 50V
C2702	2113741B69	0.1 uF, ±5%; 50 V

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C2704	2311049A21	22 uF, ±10%; 20 V
C2707	2113741B69	0.1 uF, ±5%; 50V
C2708	2311049A21	22 uF, ±10%; 20 V
C2801	2113740A33	15 pF, ±5%; 50V
C2802	2113740A71	470 pF, ±5%; 50V
C2803	2113740A43	39 pF, ±5%; 50V
C2804	2113740A33	15 pF, ±5%; 50V
C2805 thru 2809	2113740A43	39 pF, ±5%; 50V
C2810 thru 2814	2113740A33	15 pF, ±5%; 50V
C2815	2113741B69	0.1 uF, ±5%; 50 V
C2817	2113740A33	15 pF, ±5%; 50V
C2818,2819	2113741B69	0.1 uF, ±5%; 50 V
C2820 thru 2822	2113740A43	39 pF, ±5%; 50V
C2823	2380090M24	10 uF, ±20%; 50V
C2824,2825	2113741B69	0.1 uF, ±5%; 50 V
C2826,2827	2113740A71	470 pF, ±5%; 50V
C2828	2311049A21	22 uF, ±10%; 20 V
C2829,2830	2113740A43	39 pF, ±5%; 50V
C2831	2113741B69	0.1 uF, ±5%; 50 V
C2832	2113740A43	39 pF, ±5%; 50V
C2834 thru 2839	2113741B69	0.1 uF, ±5%; 50 V
		diode (see note):
CR2070,2071	4882290T04	Diode, hot carrier
CR2200,2201	4813825A01	3V, dual
CR2202	4882290T01	Schottky type
CR2230,2231	4813825A01	3V, dual
CR2232	4882290T01	Schottky type
CR2260,2261	4813825A06	Pin,35V
CR2401	4882290T01	Schottky type
CR2402,2403	4813833C10	0.1A, 70V
CR2501,2502	4813825A01	3V, dual
CR2505	4813825A01	3V, dual
		connector:
J2010	0984393T01	receptacle: uhf
		coil:
L2010	2462587N48	CHIP IND 39 NH 5%
L2011	2462587N46	CHIP IND 27 NH 5%
L2012	2462587N42	CHIP IND 12 NH 5%
L2031	2462587N42	CHIP IND 12 NH 5%
L2032	2462587N47	CHIP IND 33 NH 5%
L2033	2462587N71	1800 nH, ±5%
L2034	2462587N42	CHIP IND 12 NH 5%
L2035	2411087B36	6.8 uH
L2050 thru 2054	2484713T01	COIL SHLD 4-1/2T 7MM
L2071	2462587N42	CHIP IND 12 NH 5%
L2073,2074	2462587N64	680 nH, ±5%
L2101	2462587N64	680 nH, ±5%
L2102	2462587N76	CHIP IND 4700 NH 5%
L2103	2411087B36	6.8 uH
L2104	2462587N71	1800 nH, ±5%
L2105	2462587N76	CHIP IND 4700 NH 5%
L2107	2462587N76	CHIP IND 4700 NH 5%
L2200	2462587N71	1800 nH, ±5%
L2201	2462587N54	120 nH, ±5%
L2202	2485588U04	COIL SHLD 10MM 2 1/2 (TRN6362C)
	2485588U05	COIL SHLD 10MM 3 1/2 T (TRN6361C)
L2203	2462587N71	1800 nH, ±5%
L2205	2462587N71	1800 nH, ±5%
L2230	2462587N71	1800 nH, ±5%
L2231	2113740A55	100 pF, ±5%; 50V
L2232	2311049A10	2.2 uF, ±10%; 35V
L2233	2462587N71	1800 nH, ±5%
L2235	2113740G11	2.2 pF, ±0.1 pF; 50V
L2270	2462587N71	1800 nH, ±5%
L2271	2462587N51	68 nH, ±5%
L2301 thru 2303	2462587N71	1800 nH, ±5%
L2401	2462587N71	1800 nH, ±5%
L2402	2462587N54	120 nH, ±5%

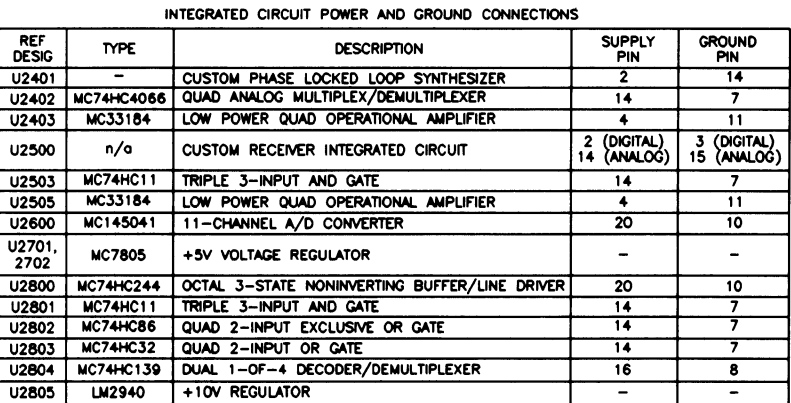
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
L2403	2411087A54	220 uH, ±10%
L2404,2405	2462587N71	1800 nH, ±5%
L2501	2413920A27	CHIP IND 1800 nH 2%
L2502	2462587N71	1800 nH, ±5%
L2503,2504	2462587N76	CHIP IND 4700 NH 5%
L2802 thru 2805	2484657R01	ferrite bead
L2806	2462587N71	1800 nH, ±5%
		transistor (see note):
Q2030	4813824A17	PNP
Q2031	4813827A24	TSTR NPN SML SIG MRF5812 5812
Q2101	4813824A10	NPN
Q2102	4885228U05	TSTR GAAS DL GATE MESFET_U73_
Q2200	4813823A06	XSTR N-CH RF JFET MMBFJ310LT1
Q2201	4813827A03	NPN
Q2230	4813823A06	XSTR N-CH RF JFET MMBFJ310LT1
Q2231	4813827A03	NPN
Q2260	4813824A10	NPN
Q2261	0611079A54	150 ohms, ±5%; 1/10W (TRN6362C)
Q2262,2263	0611079A68	470 ohms, ±5%; 1/10W
Q2264	0611079A66	470 ohms, ±5%; 1/10W
Q2265	0611079A98	10K, ±5%; 1/10W
R2266,2267	0611079A84	2700 ohms, ±5%; 1/10W
R2268	0611079A66	470 ohms, ±5%; 1/10W
R2269,2270	0611079B15	47K, ±5%; 1/10W
R2271	0611079A54	150 ohms, ±5%; 1/10W
R2274	0611079A60	270 ohms, ±5%; 1/10W (TRN6361C)
R2280	0611079A50	100 ohms, ±5%; 1/10W
R2281,2282	0611079A26	10 ohms, ±5%; 1/10W
R2301	0611079A36	27 ohms, ±5%; 1/10W
R2302	0611079A60	270 ohms, ±5%; 1/10W
R2303	0611079A72	820 ohms, ±5%; 1/10W
R2304	0611079A58	220 ohms, ±5%; 1/10W
R2305	0611079A42	47 ohms, ±5%; 1/10W
R2306	0611079A46	68 ohms, ±5%; 1/10W
R2307	0611079A58	220 ohms, ±5%; 1/10W
R2308	0611079A82	2200 ohms, ±5%; 1/10W
R2309	0611079A70	680 ohms, ±5%; 1/10W
R2310	0611079A36	27 ohms, ±5%; 1/10W
R2311,2312	0611072A15	39 ohms, ±5%; 1/4W
R2313	0611079A72	820 ohms, ±5%; 1/10W
R2314	0611072A33	220 ohms, ±5%; 1/4W
R2401	0611079A82	2200 ohms, ±5%; 1/10W
R2402	0611079A68	10K, ±5%; 1/10W
R2403	0611079A84	2700 ohms, ±5%; 1/10W
R2404	0611079A98	10K, ±5%; 1/10W
R2405	0611079A66	470 ohms, ±5%; 1/10W
R2406,2407	0611079A82	2200 ohms, ±5%; 1/10W
R2408	0611079A74	1K, ±5%; 1/10W
R2409	0611079A90	4700 ohms, ±5%; 1/10W
R2410	0611079A60	270 ohms, ±5%; 1/10W
R2411	0611079A36	27 ohms, ±5%; 1/10W

TRD6362D (R2)

TRD6362D (R2)

PIN #	SIGNAL NAME	DESCRIPTION/NOMINAL VOLTAGE
1	F_V	LOOP DIVIDER OUTPUT; WHEN LOCKED, DECAYING EXPONENTIAL WAVEFORM REPEATED AT EITHER 5KHZ OR 6.25KHZ RATE.
2	VCC	IC POWER; +5V
3	DAT	SERIAL DATA INPUT; 0-5V LOGIC LEVEL
4	CLK	CLOCK FOR SERIAL DATA PROGRAMMING; 0-5V LOGIC LEVEL
5	CS*	CHIP SELECT; LOW WHEN PROGRAMMING, HIGH WHEN NOT PROGRAMMING (0-5V LOGIC LEVEL)
6	AUX2	CHANGE FREQUENCY; TOGGLES BETWEEN LOGIC LOW AND HIGH WITH EVERY FREQUENCY CHANGE
7	AUX1	BANDSHIFT; HIGH SELECTS LOW FREQUENCY VCO, LOW SELECTS HIGH FREQUENCY VCO.
8	FIN	FEEDBACK RF INPUT: 153.45-175.45MHZ (TRD6361) 171.45-195.45MHZ (TRD6362) RIDING ON 1.4V DC
9	VBBP	DC BIAS FOR PRESCALER INPUT; 1.4V DC
10	-	-
11	-	-
12	VBB	DC BIAS FOR REFERENCE DIVIDER INPUT; 1.4V DC
13	RIN	REFERENCE DIVIDER INPUT; 1V P-P, 2.1 MHZ SQUARE WAVE RIDING ON 1.4V DC
14	VSS	IC GROUND; 0V
15	MRP	NOT USED
16	MIN	NOT USED
17	FR	REFERENCE DIVIDER OUTPUT; SAWTOOTH WAVEFORM AT EITHER 5KHZ OR 6.25KHZ WHEN LOCKED
18	UP*	WHEN LOCKED, NARROW (<1US) DOWN PULSES AT EITHER 5KHZ OR 6.25KHZ RIDING ON .7V DC
19	LOCK*	WHEN LOCKED, WHEN LOCKED, NARROW (<1US) DOWN PULSES AT EITHER 5KHZ OR 6.25KHZ RIDING ON 5V DC
20	DOWN*	WHEN LOCKED, NARROW (<1US) DOWN PULSES AT EITHER 5KHZ OR 6.25KHZ RIDING ON .7V DC

MODULE SELECT DECODE CIRCUITRY DECODES ADDRESS BUS LINES A2 THRU A5 TO DETERMINE IF REGENER MODULE IS BEING SELECTED BY STATION CONTROL FOR TRANSFER OF DATA TO RECEIVER BOARD. IF SO, U2B04 IS ENABLED AND ADDRESS LINES A0 AND A1 ARE DECODED BY CHIP SELECT CIRCUITRY TO SELECT THE SPECIFIC DIVIDE ON THE REGENER BOARD (EITHER U2401 OR U2600) TO COMMUNICATE WITH STATION CONTROL (VIA CLK AND MOSI LINES). ALSO DECODED IS SYNTH ADAPT SIGNAL WHICH CONTROLS THE LOOP FILTER ANALOG SWITCHES.



The diagram shows several unused components and pins:

- U2505C:** An OR gate with inputs 9 and 10, and output 8 (NC).
- U2803C:** An AND gate with inputs 9 and 10, and output 8 (NC).
- U2801B:** An AND gate with inputs 9 and 11, and output 8 (NC).
- U2804:** A 4-to-1 multiplexer with inputs A0B (14), A1B (13), Y0B (12), Y1B (11), Y2B (10), Y3B (9), and output SELECT B (15). It is powered by +5V and ground.
- U2800:** A 4-to-1 multiplexer with inputs B1 (11), B2 (13), B3 (15), B4 (17), and output P/O (18). It is powered by +5V and ground.

A/D CONVERTER U2600 ACCEPTS VARIOUS ANALOG SENSE SIGNALS FROM KEY METERING POINTS ON THE RECEIVER BOARD. DESIRED SENSE LINE (AS SELECTED BY STATION CONTROL VIA MOSI DATA) IS CONVERTED TO DIGITAL FORMAT AND SENT SERIALLY TO STATION CONTROL (U2600-PIN 16).